

<213> Candida albicans

## SEQUENCE LISTING

Edwards Jr., John E., et al.

<120> Pharmaceutical Compositions and Methods to Vaccinate Against Disseminated Candidiasis.

| <130>  | 259/064                        |    |
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| <140>  | US 09/715,876                  |    |
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| <212>  | DNA                            |    |
| <213>  | Candida albicans               |    |
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| cgggar | ccag atgcttcaac aatttacatt g   | -  |
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| aaagggccag gatacccaac ttggaatgct gttttgggtt ggtccttaga tggtaccagt         | 180  |
| gccaatccag gggatacatt cacattgaat atgccatgtg tgtttaaata tactacttca         | 240  |
| caaacatctg ttgatttaac tgccgatggt gttaaatatg ctacttgtca attttattct         | 300  |
| ggtgaagaat tcacaacttt ttctacatta acatgtactg tgaacgacgc tttgaaatca         | 360  |
| tccattaagg catttggtac agttacttta ccaattgcat tcaatgttgg tggaacaggt         | 420  |
| tcatcaactg atttggaaga ttctaaatgt tttactgctg gtaccaatac agtcacattt         | 480  |
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| aatgatggtg ataaagatat ctcaattgat gttgagtttg aaaagtcaac cgttgatcca         | 600  |
| agtgcatatt tgtatgcttc cagagttatg ccaagtctca ataaggtcac aactcttttt         | 660  |
| gtggcaccac aatgtgaaaa tggttacaca tctggtacaa tggggttctc cagtagtaac         | 720  |
| ggtgacgttg ctattgattg ctcaaatatt catattggta tcacaaaagg attaaatgat         |      |
| tggaattatc cggtttcatc tgaatcattt agttacacta aaacttgtac atctaatgga         | 780  |
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85 90 . 95

| Gln        | Phe        | Tyr        | Ser<br>100 | Gly        | Glu        | Glu        | Phe        | Thr<br>105 | Thr        | Phe        | Ser        | Thr        | Leu<br>110 | Thr        | Cys        |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Thr        | Val        | Asn<br>115 | Asp        | Ala        | Leu        | Lys        | Ser<br>120 | Ser        | Ile        | Lys        | Ala        | Phe<br>125 | Gly        | Thr        | Val        |
| Thr        | Leu<br>130 | Pro        | Ile        | Ala        | Phe        | Asn<br>135 | Val        | Gly        | Gly        | Thr        | Gly<br>140 | Ser        | Ser        | Thr        | Asp        |
| Leu<br>145 | Glu        | Asp        | Ser        | Lys        | Cys<br>150 | Phe        | Thr        | Ala        | Gly        | Thr<br>155 | Asn        | Thr        | Val        | Thr        | Phe<br>160 |
| Asn        | Asp        | Gly        | Asp        | Lys<br>165 |            | Ile        | Ser        | Ile        | Asp<br>170 | Val        | Glu        | Phe        | Glu        | Lys<br>175 | Ser        |
| Thr        | Val        | Asp        | Pro<br>180 | Ser        | Ala        | Tyr        | Leu        | Tyr<br>185 | Ala        | Ser        | Arg        | Val        | Met<br>190 | Pro        | Ser        |
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| Ile<br>225 | Asp        | Cys        | Ser        | Asn        | Ile<br>230 | His        | Ile        | Gly        | Ile        | Thr<br>235 | Lys        | Gly        | Leu        | Asn        | Asp<br>240 |
| Trp        | Asn        | Tyr        | Pro        | Val<br>245 | Ser        | Ser        | Glu        | Ser        | Phe<br>250 | Ser        | Tyr        | Thr        | Lys        | Thr<br>255 | Cys        |
| Thr        | Ser        | Asn        | Gly<br>260 | Ile        | Gln        | Ile        | Lys        | Tyr<br>265 | Gln        | Asn        | Val        | Pro        | Ala<br>270 | Gly        | Tyr        |
| Arg        | Pro        | Phe<br>275 | Ile        | Asp        | Ala        | Tyr        | Ile<br>280 | Ser        | Ala        | Thr        | Asp        | Val<br>285 | Asn        | Gln        | Tyr        |
| Thr        | Leu<br>290 | Ala        | Tyr        | Thr        | Asn        | Asp<br>295 | Tyr        | Thr        | Cys        | Ala        | Gly<br>300 | Ser        | Arg        | Leu        | Gln        |
| Ser<br>305 | Lys        | Pro        | Phe        | Thr        | Leu<br>310 | Arg        | Trp        | Thr        | Gly        | Tyr<br>315 | Lys        | Asn        | Ser        | Asp        | Ala<br>320 |
| Gly        | Ser        | Asn        | Gly        | Ile<br>325 | Val        | Ile        | Val        | Ala        | Thr<br>330 | Thr        | Arg        | Thr        | Val        | Thr<br>335 | Asp        |
| Ser        | Thr        | Thr        | Ala<br>340 | Val        | Thr        | Thr        | Leu        | Pro<br>345 | Phe        | Asn        | Pro        | Ser        | Val<br>350 | Asp        | Lys        |
| Thr        | Lys        | Thr<br>355 | Ile        | Glu        | Ile        | Leu        | Gln<br>360 | Pro        | Ile        | Pro        | Thr        | Thr<br>365 | Thr        | Ile        | Thr        |
| Thr        | Ser        | Tyr        | Val        | Gly        | Val        | Thr        |            | Ser        | Tyr        | Leu        | Thr        | Lys        | Thr        | Ala        | Pro        |

Ile Gly Glu Thr Ala Thr Val Ile Val Asp Val Pro Tyr His Thr Thr

| 385        |            |            |            |            | 390        |            |            |            |            | 395        |            |            |            |            | 400        |
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| Arg        | Thr        | Asn        | Pro<br>420 | Thr        | Asp        | Ser        | Ile        | Asp<br>425 | Thr        | Val        | Val        | Val        | Gln<br>430 | Val        | Pro        |
| Leu        | Pro        | Asn<br>435 | Pro        | Thr        | Val        | Ser        | Thr<br>440 | Thr        | Glu        | Tyr        | Trp        | Ser<br>445 | Gln        | Ser        | Phe        |
| Ala        | Thr<br>450 | Thr        | Thr        | Thr        | Val        | Thr<br>455 | Ala        | Pro        | Pro        | Gly        | Gly<br>460 | Thr        | Asp        | Thr        | Val        |
| Ile<br>465 | Ile        | Arg        | Glu        | Pro        | Pro<br>470 | Asn        | His        | Thr        | Val        | Thr<br>475 | Thr        | Thr        | Glu        | Tyr        | Trp<br>480 |
| Ser        | Gln        | Ser        | Phe        | Ala<br>485 | Thr        | Thr        | Thr        | Thr        | Val<br>490 | Thr        | Ala        | Pro        | Pro        | Gly<br>495 | Gly        |
| Thr        | Asp        | Ser        | Val<br>500 | Ile        | Ile        | Arg        | Glu        | Pro<br>505 | Pro        | Asn        | Pro        | Thr        | Val<br>510 | Thr        | Thr        |
| Thr        | Glu        | Tyr<br>515 | Trp        | Ser        | Gln        | Ser        | Phe<br>520 | Ala        | Tḥr        | Thr        | Thr        | Thr<br>525 | Val        | Thr        | Ala        |
| Pro        | Pro<br>530 | Gly        | Gly        | Thr        | Asp        | Ser<br>535 | Val        | Ile        | Ile        | Arg        | Glu<br>540 | Pro        | Pro        | Asn        | Pro        |
| Thr<br>545 | Val        | Thr        | Thr        | Thr        | Glu<br>550 | Tyr        | Trp        | Ser        | Gln        | Ser<br>555 | Tyr        | Ala        | Thr        | Thr        | Thr<br>560 |
| Thr        | Val        | Thr        | Ala        | Pro<br>565 | Pro        | Gly        | Gly        | Thr        | Asp<br>570 | Ser        | Val        | Ile        | Ile        | Arg<br>575 | Glu        |
| Pro        | Pro        | Asn        | His<br>580 | Thr        | Val        | Thr        | Thr        | Thr<br>585 | Glu        | Tyr        | Trp        | Ser        | Gln<br>590 | Ser        | Tyr        |
| Ala        | Thr        | Thr<br>595 | Thr        | Thr        | Val        | Thr        | Ala<br>600 | Pro        | Pro        | Gly        | Gly        | Thr<br>605 | Asp        | Thr        | Val        |
| Ile        | Ile<br>610 | Arg        | Glu        | Pro        | Pro        | Asn<br>615 | His        | Thr        | Val        | Thr        | Thr<br>620 | Thr        | Glu        | Tyr        | Trp        |
| Ser<br>625 | Gln        | Ser        | Phe        | Ala        | Thr<br>630 | Thr        | Thr        | Thr        | Val        | Thr<br>635 | Gly        | Pro        | Pro        | Ser        | Gly<br>640 |
| Thr        | Asp        | Thr        | Val        | Ile<br>645 | Ile        | Arg        | Glu        | Pro        | Pro<br>650 | Asn        | Pro        | Thr        | Val        | Thr<br>655 | Thr        |
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| Pro        | Pro        | Gly<br>675 | Glu        | Thr        | Asp        | Thr        | Val<br>680 | Leu        | Ile        | Arg        | Glu        | Pro<br>685 | Pro        | Asn        | His        |
| Thr        | Val        | Thr        | Thr        | Thr        | Glu        | Tyr        | Trp        | Ser        | Gln        | Ser        | Tyr        | Ala        | Thr        | Thr        | Thr        |

690 Thr Val Thr Ala Pro Pro Gly Glu Thr Asp Thr Val Leu Ile Arg Glu 715 Pro Pro Asn His Thr Val Thr Thr Glu Tyr Trp Ser Gln Ser Tyr 725 Ala Thr Thr Thr Val Thr Ala Pro Pro Gly Gly Thr Asp Thr Val 745 Ile Ile Arg Glu Pro Pro Asn Pro Thr Val Thr Thr Glu Tyr Trp 760 Ser Gln Ser Phe Ala Thr Thr Thr Thr Val Thr Ala Pro Pro Gly Gly 775 Thr Asp Thr Val Ile Ile Tyr Glu Ser Met Ser Ser Ser Lys Ile Ser 790 Thr Ser Ser Asn Asp Ile Thr Ser Ile Ile Pro Ser Phe Ser Arg Pro 810 His Tyr Val Asn Ser Thr Thr Ser Asp Leu Ser Thr Phe Glu Ser Ser 825 Ser Met Asn Thr Pro Thr Ser Ile Ser Ser Asp Gly Met Leu Leu Ser 840 Ser Thr Thr Leu Val Thr Glu Ser Glu Thr Thr Thr Glu Leu Ile Cys 855 Ser Asp Gly Lys Glu Cys Ser Arg Leu Ser Ser Ser Ser Gly Ile Val 875 Thr Asn Pro Asp Ser Asn Glu Ser Ser Ile Val Thr Ser Thr Val Pro 890 885 Thr Ala Ser Thr Met Ser Asp Ser Leu Ser Ser Thr Asp Gly Ile Ser 905 Ala Thr Ser Ser Asp Asn Val Ser Lys Ser Gly Val Ser Val Thr Thr 920 Glu Thr Ser Val Thr Thr Ile Gln Thr Thr Pro Asn Pro Leu Ser Ser Ser Val Thr Ser Leu Thr Gln Leu Ser Ser Ile Pro Ser Val Ser Glu 950 Ser Glu Ser Lys Val Thr Phe Thr Ser Asn Gly Asp Asn Gln Ser Gly 970 Thr His Asp Ser Gln Ser Thr Ser Thr Glu Ile Glu Ile Val Thr Thr 985 980 Ser Ser Thr Lys Val Leu Pro Pro Val Val Ser Ser Asn Thr Asp Leu

695

700

995 1000 1005

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Thr Ser Glu Pro Thr Asn Thr Arg Glu Gln Pro Thr Thr Leu Ser Thr Thr Ser Asn Ser Ile Thr Glu Asp Ile Thr Thr Ser Gln Pro Thr Gly Asp Asn Gly Asp Asn Thr Ser Ser Thr Asn Pro Val Pro Thr Val Ala Thr Ser Thr Leu Ala Ser Ala Ser Glu Glu Asp Asn Lys Ser Gly Ser His Glu Ser Ala Ser Thr Ser Leu Lys Pro Ser Met Gly Glu Asn Ser Gly Leu Thr Thr Ser Thr Glu Ile Glu Ala Thr Thr Ser Pro Thr Glu Ala Pro Ser Pro Ala Val Ser Ser Gly Thr Asp Val Thr Thr Glu Pro Thr Asp Thr Arg Glu Gln Pro Thr Thr Leu Ser Thr Thr Ser Lys Thr Asn Ser Glu Leu Val Ala Thr Thr Gln Ala Thr Asn Glu Asn Gly Gly Lys Ser Pro Ser Thr Asp Leu Thr Ser Ser Leu Thr Thr Gly Thr Ser Ala Ser Thr Ser Ala Asn Ser Glu Leu Val Thr Ser Gly Ser Val Thr Gly Gly Ala Val Ala Ser Ala Ser Asn Asp Gln Ser His Ser Thr Ser Val Thr Asn Ser Asn Ser Ile Val Ser Asn Thr Pro Gln Thr Thr Leu Ser Gln Gln Val Thr Ser Ser Ser Pro Ser Thr Asn Thr Phe Ile Ala Ser Thr Tyr Asp Gly Ser Gly Ser Ile Ile Gln His Ser Thr Trp 

Leu Tyr Gly Leu Ile Thr Leu Leu Ser Leu Phe Ile 1250 1255 1260

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| 43 | NPL   | 6    |
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Remarks:

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